

Ice Exercise (ICEX) 2016 Environmental Planning Team Narrative

U.S. Fleet Forces Command (USFF) nominates the team responsible for preparing the environmental planning and compliance documentation for Ice Exercise (ICEX) 2016 for the FY16 CNO Environmental Planning Team Award.

INTRODUCTION

The U.S. Navy Arctic Roadmap, issued by CNO in February 2014 as follow-on to the 2009 Arctic Roadmap, “outlines the U.S. Navy’s strategic approach for the Arctic Ocean and the ways and means to support the desired defense and national end states.” The Arctic Roadmap tasks USFF with “Ensuring adequate environmental compliance (Marine Mammal Protection Act, Endangered Species Act, National Environmental Policy Act and Executive Order 12114) for at-sea training and testing activities in the Arctic regions.” (Task 1.1.10)

The Navy’s Ice Exercise (ICEX) is a biennial exercise conducted above the Arctic Circle in cooperation with other branches of the military, government agencies, allied partners, academic institutions, and private organizations. ICEX provides submarines the opportunity to train in an operationally demanding and challenging environment. The Arctic Submarine Laboratory (ASL) is responsible for the ICEX program and assets from both COMSUBLANT (serving as Officer in Tactical Command) and COMSUBPAC participate in the exercise. In 2015, ASL was realigned to fall under the USFF chain of command.

Consistent with the Roadmap’s direction, USFF submitted a comprehensive plan as part of the Program Objectives Memorandum (POM) 16 for environmental compliance in the Arctic region. However, because programmed funding will not be available until FY19, and comprehensive coverage will not be in place until after 2021, USFF needed to develop an interim compliance solution. ICEX 2016 was the first Arctic training and testing combined event to take place after issuance of the final Roadmap and realignment of ASL, and as such it served as USFF’s test case for development and execution of an interim environmental compliance plan for an Arctic exercise.

In addition to the evaluation of submarine tactics and operability, ICEX 2016 included the testing of emerging technologies, research activities, and data collection on Arctic environmental conditions. To support these objectives, an underwater tracking range and temporary ice camp were established north of Alaska.

ICEX 2016 presented a number of unique environmental planning challenges due to the nature of the event and the complexities of the Arctic environment. The three overarching environmental planning goals for ICEX 2016 were ambitious. First, the Navy’s intent was to design the exercise in a way that would minimize the environmental footprint. All materials were to be removed from the site of the ice camp at the conclusion of the event, resulting in no lasting footprint on the ice. Secondly, the environmental planning process would be used to achieve an integrated operational and environmental planning approach in order to improve the sustainability of these Arctic operations now and into the future. The final goal was to achieve full environmental compliance that addressed and accommodated the challenges presented by the unique Arctic conditions while continuing to meet USFF ICEX 2016 mission objectives.

Successfully meeting these goals would lay solid groundwork for future comprehensive Arctic compliance efforts.

Recognizing the challenges posed by ICEX 2016, in late 2014 USFF assembled an environmental planning team with a distinctive blend of expertise as well as an ability to work in close coordination with one another and with regulators. Laura Busch, USFF Natural Resources Program Manager, skillfully led this team of Navy and contractor staff with expertise in environmental planning, environmental law, compliance, acoustic modeling, exercise planning, and Navy operations.

BACKGROUND

The Navy's mission is to organize, train, equip, and maintain combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. The Navy fulfills this responsibility by establishing and executing training programs and ensuring naval forces have access to ranges, operating areas, and airspace needed to develop and maintain critical operational skills. The Navy's research and acquisition community builds and tests ships, aircraft, weapons, combat systems, and conducts scientific research activities to achieve and maintain military readiness. Testing activities ensure naval forces are equipped with well-maintained systems that take advantage of the latest technological advances.

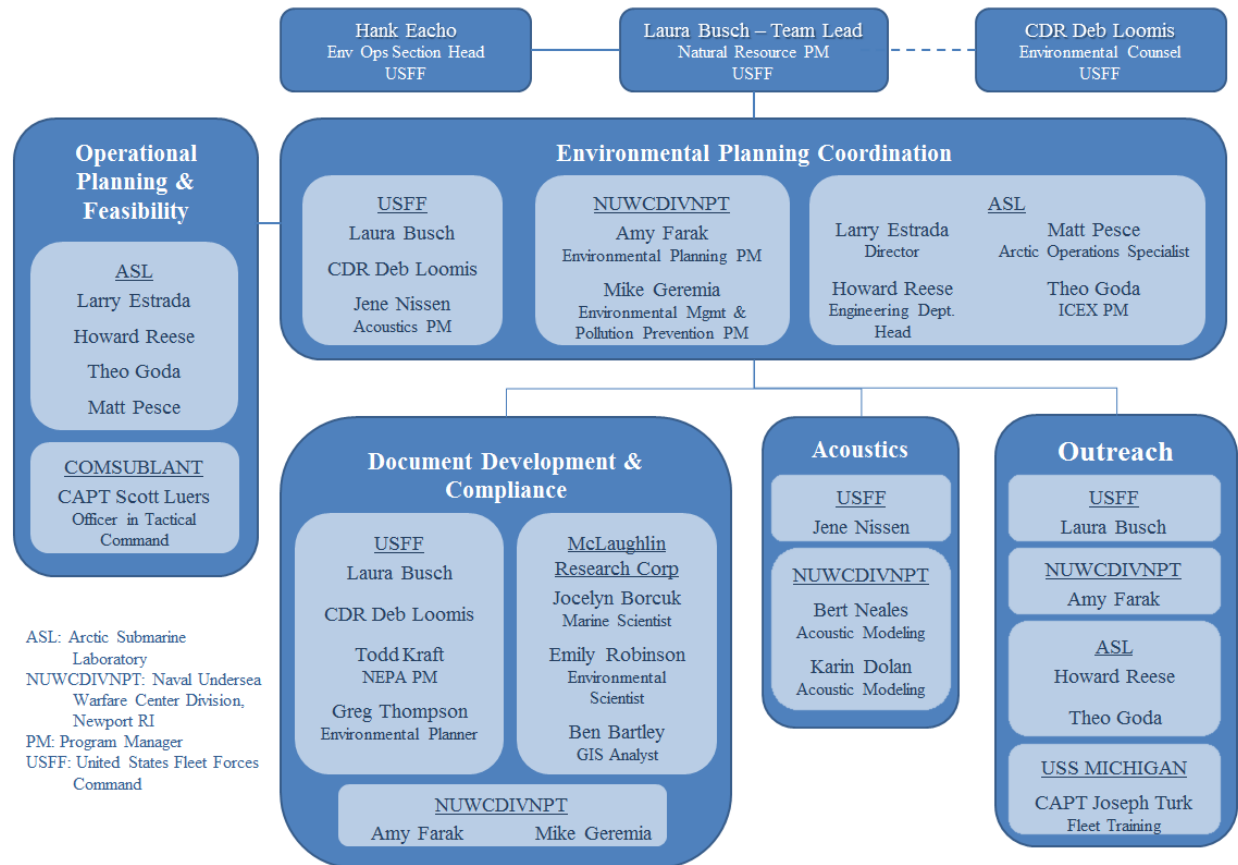
The primary purpose of ICEX 2016 was the execution of submarine training and testing. The establishment of the ice camp provided an additional opportunity to conduct scientific studies and gather environmental data such as weather and ice thickness. ICEX 2016 was planned to occur over a 6 week period from late February to early April 2016, with the ice camp located on an ice floe in the Beaufort Sea approximately 150-200 nm north of Prudhoe Bay, Alaska.

Given the substantial interest in the evolving future of the Arctic, ICEX 2016 was a high profile exercise involving many organizations. Participants included allied partners from United Kingdom, Canada, and Norway; joint partners from U.S. Coast Guard, U.S. Air Force, Alaska Air National Guard, and Alaska Army National Guard; federal agencies including Department of Interior, Department of Homeland Security, and Department of State; and various academic institutions including the Naval Postgraduate School and the Massachusetts Institute of Technology. Among the many visitors to the ice camp were Secretary of the Navy Ray Mabus, members of U.S. Congress, members of the U.S. delegation to the multi-national Arctic Council, and Lesley Stahl of the CBS news show "60 Minutes," which aired a segment about the event.

Organization/Staffing and Challenges/Issues Faced

The complexity of the issues associated with ICEX 2016 required the Environmental Planning Team to have expertise in a number of areas, including naval operations, exercise planning, environmental planning, environmental law, natural resources, compliance, acoustic modeling and analysis, public outreach, and program management. The ICEX 2016 Environmental Planning Team ("the Team") was led by Laura Busch, USFF Natural Resources Program Manager. The Team and sub-teams organized to oversee different aspects of the project are shown in Figure 1, with primary team members and significant contributors listed. The teams are described below.

Figure 1: ICEX 16 Environmental Planning Team



Environmental Planning Team. This overarching team integrated the operational and environmental planning processes. The diverse group weighed the exercise requirements against potential impacts to determine possible modifications that could improve the exercise’s environmental sustainability. The team supplied the information necessary for document development and compliance processes, while also using the results of those efforts to consider options for reducing the exercise footprint. This team ensured that the results of the planning and compliance processes were implemented. For example, environmental requirements were identified for inclusion in the Polar Bear Interaction, Management, and Avoidance Plan; the ICEX Camp Manual; and the Oil Spill Response Plan. As the operational planning effort required contingency plans for an emergency demobilization, this group ensured that key environmental considerations were included in those plans as well. The following sub-teams were an integral part of the planning process.

- (1) *Operational Planning & Feasibility.* The ICEX operational and exercise planning experts were committed to complying with all environmental laws, reducing the environmental footprint, and involving the Environmental Planning Team in all aspects of development of the exercise. They identified the requirements, coordinated with all on-ice participants, and evaluated the operational feasibility of mitigation measures and all other proposed modifications to the event. The integration of this sub-team into the overarching Environmental Planning Team was critical to its success.

- (2) *Document Development & Compliance.* This group was responsible for developing the Overseas Environmental Assessment and associated regulatory documents and completing the consultation and permitting processes. Within this group, Amy Farak led the NUWC team (including contractors) that authored the environmental documents. The primary regulatory concerns included the following:
- *Natural Resources.* Laura Busch and Amy Farak led the complex task of completing the natural resource consultation and permitting processes. Consultations were completed under the Endangered Species Act (ESA), with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) for ringed seals and polar bears, respectively. Under the Marine Mammal Protection Act (MMPA), the Team was able to use a more precise method of analysis than the Navy has previously applied, allowing the Navy to fulfill sonar training requirements without the need for a potentially restrictive permit. An intentional take permit under MMPA, however, was obtained to allow watch standers to actively deter a polar bear using certain measures such as vehicle noise, air horns, and warning shots, thereby ensuring safety of camp personnel. Consultation under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) was completed with NMFS for Arctic cod Essential Fish Habitat (EFH).
 - *Clean Water Act.* As the location of the ICEX camp on an ice floe made it neither a shore-side facility nor a vessel (though it was located on water), the application of Clean Water Act requirements for wastewater and sewage management was unique. Mike Geremia and CDR Deb Loomis led the Navy's Clean Water Act permitting efforts, successfully navigating the complicated regulatory issues to obtain a National Pollutant Discharge Elimination System permit for discharging into the Beaufort Sea graywater from the galley sink and reject water from two reverse osmosis units.
- (3) *Acoustics.* This group conducted the modeling of potential impacts from sound sources used during ICEX submarine training and supplied results to the Document Development & Compliance Sub-Team.
- (4) *Outreach.* Although not a legal or regulatory requirement, this group completed informal discussions with two Alaska Native communities. The Outreach Sub-Team members traveled to Alaska to conduct tribal coordination meetings with the Inupiat Community of the Arctic Slope Tribal Council and with tribal elders of the Native Village of Nuiqsut.

Environmental laws and regulations applying to ICEX 2016 included Executive Order 12114, the MMPA, the ESA, the Magnuson-Stevens Act, the Clean Water Act, and the Marine Protection, Research and Sanctuaries Act, also known as the Ocean Dumping Act. The Team was faced with multiple, complex, and interrelated permitting and consultation processes with different regulatory agencies (NMFS, USFWS, and the Environmental Protection Agency [EPA]). Through extensive review, analysis, and discussion internally and with the regulators, the Team developed and implemented effective and, in some cases, groundbreaking approaches to meet the requirements of applicable environmental laws and regulations. As the various permitting/consultation efforts were interconnected, frequent and extensive coordination between Navy team members was essential.

SUMMARY OF ACCOMPLISHMENTS

As previously stated, the goals laid out for the ICEX 2016 Environmental Planning Team were ambitious:

- Design the exercise in a way that minimizes the environmental footprint.
- Integrate the operational and environmental planning approach in order to improve the sustainability of these Arctic operations now and into the future.
- Achieve full environmental compliance that addresses and accommodates the challenges presented by the unique Arctic conditions while continuing to meet USFF ICEX 2016 mission objectives.

The Team was able to successfully meet the challenging environmental planning goals set for them while significantly improving regulatory process negotiations and ensuring support for the military mission. The ICEX 2016 Environmental Planning Team developed and successfully applied new processes and approaches in several areas of the project.

Outstanding and Unique Features

- *Improved Sustainability & Footprint.* By working toward a more integrated operational and environmental planning process, the Team was able to rethink many aspects of the exercise in order to reduce the event's environmental footprint. With an eye toward future Arctic training and testing, ICEX 2016 was used as a test case to experiment with some innovative ways of doing business.
 - New, more environmentally sustainable materials, designs, and approaches were researched and evaluated. The Operational Planning & Feasibility Team partnered with U.S. Army Natick Soldier Research, Development and Engineering Center to identify various shelter and flooring options suitable for the Arctic environment. Two types of tents were tested to determine the better option, and the command hut was replaced with a dome structure, reducing the amount of wood (and disposable materials) needed to build the camp.
 - The Team evaluated a range of sewage treatment options that would comply with regulatory requirements while providing personnel at the camp with sanitary needs. Direct discharge, incinerating toilets, and back-hauling waste in drums were all considered. After review of Clean Water Act and Ocean Dumping Act requirements, and based on the logistics of implementation, the ultimate decision was to haul all of the human waste back to Prudhoe Bay for disposal. The analysis, however, will lend itself to future reconsideration pending changes to logistics challenges and mission requirements.
 - The use of a reverse osmosis system was evaluated to serve as a backup source of fresh water thereby reducing the need for ice mining to obtain water. Additionally, ecologically-friendly soaps were used in the galley sink to reduce potential impacts from the graywater discharge.
 - Camp materiel was air-dropped by the U.S. Air Force. This provided both critical training for the Air Force and reduced the number of flights required to deliver the air-dropped items to the camp. Proving this concept will allow for quicker delivery of materials and construction of future camps, thereby reducing the amount of time spent on the ice.

- *Above Ice Compliance Issues.* The location of the camp on an ice floe presented a number of new regulatory issues for the Navy.
 - *National Pollutant Discharge Elimination System Permit.* The Team successfully obtained a National Pollutant Discharge Elimination System permit for discharging graywater from the galley sink and reject water from two reverse osmosis units, a first for a Navy encampment that was neither a shore-side facility nor a vessel.
 - *Permitted Polar Bear Deterrence.* The Team obtained the Navy's first permit for the intentional, not incidental, harassment of a marine mammal, to allow for the active deterrence of polar bears. This permit allowed for harassment of polar bears if seen near the ice camp or during scientific excursions away from the camp, which is an important safety requirement in the Arctic. As part of receiving the permit, all polar bear watch personnel were required to complete training provided by the USFWS. This permit was invaluable when three bears were spotted near a parked aircraft and had to be deterred from entering camp by an incoming plane.
 - *Ringed Seal Mitigation.* The Team consulted informally with NMFS (Alaska Region) regarding potential effects on the ESA-listed ringed seal. The primary concern raised by NMFS was the effect on subnivean (within the snow/ice layer) lairs, which ringed seals construct as birthing habitat. The Navy had not previously consulted on activities that could affect this type of habitat and therefore had to develop unique mitigation that would satisfy NMFS's requirements as well as be operationally feasible to implement. Ultimately, a scheme that involved avoiding pressure ridges (areas of uplifted snow/ice), where ringed seals tend to construct their lairs, was deemed suitable by all parties.
- *Below Ice Compliance: Application of Military Readiness Definition under MMPA.* In analyzing the potential for incidental takes of marine mammals, the Team developed and gained NMFS' concurrence on an analytical approach that more accurately applied the definition of marine mammal impacts specific to "military readiness activities" under the 2004 National Defense Authorization Act (NDAA). The acoustic analysis used the same approach (e.g., model, criteria and thresholds, etc.) as the Navy's comprehensive at-sea planning documents (i.e., Phase II). However, unlike the Phase II documents, details regarding the time and location of the activity were well known, which allowed for additional post-model qualitative analysis. This qualitative analysis showed that, although the model estimated a small number of exposures, any reactions would not rise to the level where the "behavioral patterns are abandoned or significantly altered" and therefore were not considered harassment. This effort was the first time the Navy was able to successfully apply the NDAA definition of marine mammal impacts and is a significant step forward in Navy's evolving approach to marine mammal impact analysis.
- *Emergency Demobilization Support.* Toward the end of ICEX 2016, cracks in the ice floe necessitated an emergency demobilization. As the operational and environmental planning process had been well integrated, including building key environmental priorities into the contingency plan, ICEX 2016 tracked with the environmental planning goals even during the emergency demobilization. A prioritization scheme for removal of regulated items from the camp during demobilization ensured no materials of environmental concern were left behind. Ms. Busch traveled to the ice camp as a member of the demobilization team, observing that the prioritization scheme was followed and all reasonable steps were taken to remove regulated items from the camp. She remained at

Prudhoe Bay to provide the most current information, thereby allowing CDR Loomis to coordinate with the EPA and keep them apprised of the ever-changing situation and conditions. At the completion of the demobilization, the Team submitted a follow-on report on the emergency demobilization actions to EPA in accordance with the Navy's Clean Water Act permit. While the emergency demobilization did not allow for all camp materials to be removed from the ice, all items of environmental concern (e.g., hazardous waste, fuel, human waste) were successfully retrieved and returned to Prudhoe Bay. Because of the comprehensive planning process that was in place, the Navy remained in compliance with permits and minimized the environmental footprint as much as possible.

- *Outreach to Native Communities.* Two Alaska Native groups (the Native Village of Nuiqsut and the Inupiat Community of the Arctic Slope) requested to meet with Navy regarding concerns about impacts from ICEX. Members of the Team traveled to Alaska and met with these communities on 5 and 6 November 2016. At these meetings, the Team was able to successfully address the groups' concerns, improve the transparency of Navy's ICEX program, and engage these native communities regarding the Navy's future comprehensive compliance efforts.

Accomplishments

The team successfully completed an Overseas Environmental Assessment for ICEX 2016, and an accompanying Finding of No Significant Harm (FONSH) was signed by USFF N02 on 5 February 2016. All associated regulatory processes were completed prior to the signing of the FONSH, including:

- (1) Consultation with USFWS under the ESA (concurrence received 6 October 2015)
- (2) Consultation with NMFS under the Magnuson-Stevens Act (concurrence received 9 November 2015)
- (3) Consultation with NMFS under the ESA (concurrence received 10 December 2015)
- (4) EPA issuance of a National Pollutant Discharge Elimination System permit under the Clean Water Act (issued 14 December 2015)
- (5) USFWS issuance of an MMPA/ESA intentional take permit for active polar bear deterrence (permit issued 22 December 2015)

The ambitious goals laid out for the ICEX 2016 Environmental Planning Team were achieved in full. Integrating operational and environmental planning efforts established an open and productive dialogue among operational and environmental staff, allowing for environmentally sustainable approaches and environmental regulatory requirements to be met while supporting the submarine training and testing activities, technology evaluations, and Arctic research initiatives. The exercise was planned and executed in a manner that minimized the lasting environmental footprint and set the stage for future ICEXs. Complex regulatory questions, many of which had never been considered by the Navy, were addressed and unique environmental conditions considered. Groundbreaking and innovative approaches were implemented to ensure full compliance while also maintaining flexibility to fully meet the mission objectives and ensure personnel safety.

Not only was the Team able to rise to the challenges presented by ICEX 2016, but the significant achievements of this Team will directly affect USFF's effort to complete comprehensive environmental coverage for future Arctic events. The advancements made by this Team in the approaches to planning, analyzing, and supporting Navy's Arctic activities will lead the way for future success in this important frontier for the Navy.